



Dms 1688

REC'D OCT 21 1987

## MATERIAL SAFETY DATA SHEET

97367 (4-85)

MSDS NUMBER

23-6

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24 HOUR EMERGENCY ASSISTANCE			GENERAL MSDS ASSISTANCE		
SHELL: 713-473-9461 CHEMTREC: 800-424-9300			SHELL: 713-241-4819		
ACUTE HEALTH * + 2	FIRE 1	REACTIVITY 0	HAZARD RATING LEAST - 0 SLIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4		
*For acute and chronic health effects refer to the discussion in Section III					



SECTION I	NAME
PRODUCT	EPON(R) RESIN 828
CHEMICAL NAME	BISPHENOL A/EPICHLOROHYDRIN EPOXY RESIN
CHEMICAL FAMILY	EPOXY RESIN
SHELL CODE	43240

SECTION II-A	PRODUCT/INGREDIENT		
NO.	COMPOSITION	CAS NUMBER	PERCENT

P	BISPHENOL A/EPICHLOROHYDRIN EPOXY RESIN	25068-38-6	100
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THIS PRODUCT IS AN EPOXY RESIN PRODUCED BY THE CONDENSATION REACTION OF EPICHLOROHYDRIN AND BISPHENOL-A. THESE RAW MATERIALS ARE CONSUMED IN THE PROCESS. RESIDUAL LEVELS OF EPICHLOROHYDRIN ARE CONTROLLED TO 1 PPM, MAX., IN THE PRODUCT. RESIDUAL LEVELS OF BISPHENOL-A ARE TYPICALLY 1-10 PPM.

SECTION II-B	ACUTE TOXICITY DATA		
NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50

P	11.4 G/KG (RAT)	> 20 M/KG (RABBIT)	NO DEATHS IN SAT'D AIR, 8 HR*
P	15.6 G/KG (MOUSE)		

\*THIS INHALATION TEST MAY NOT BE RELEVANT DUE TO LOW VOLATILITY OF THE RESIN.

SECTION III	HEALTH INFORMATION
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THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

**EYE CONTACT**

BASED ON PRODUCT TESTING PRODUCT IS MODERATELY IRRITATING TO THE EYES. CONTACT WITH PRODUCT AT ELEVATED TEMPERATURES CAN RESULT IN THERMAL BURNS.

**SKIN CONTACT**

BASED ON PRODUCT TESTING PRODUCT IS MODERATELY IRRITATING TO THE SKIN. BASED ON PRODUCT TESTING PRODUCT MAY CAUSE SKIN SENSITIZATION. CONTACT WITH PRODUCT AT ELEVATED TEMPERATURES CAN RESULT IN THERMAL BURNS.

**INHALATION**

BECAUSE OF ITS LOW VOLATILITY THIS PRODUCT IS NOT LIKELY TO BE AN INHALATION HAZARD.

**INGESTION**

BASED ON PRODUCT TESTING PRODUCT IS CONSIDERED TO HAVE A LOW ORDER OF ACUTE ORAL TOXICITY.

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#### SIGNS AND SYMPTOMS

IRRITATION AS NOTED. SKIN SENSITIZATION (ALLERGY) MAY BE EVIDENCED BY RASHES, ESPECIALLY HIVES.

#### AGGRAVATED MEDICAL CONDITIONS

PREEXISTING SKIN AND EYE DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT. PREEXISTING SKIN OR LUNG ALLERGIES MAY INCREASE THE CHANCE OF DEVELOPING INCREASED ALLERGY SYMPTOMS FROM EXPOSURE TO THIS PRODUCT.

#### SECTION IV OCCUPATIONAL EXPOSURE LIMITS

NO.	PEL/TWA	OSHA	PEL/CEILING	TLV/TWA	ACGIH	TLV/STEL	OTHER
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NO OSHA NOR ACGIH LIMITS HAVE BEEN ESTABLISHED FOR THIS PRODUCT.

#### SECTION V EMERGENCY AND FIRST AID PROCEDURES

##### EYE CONTACT

FLUSH EYES WITH PLENTY OF WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION. IF CONTACT WITH HOT PRODUCT OCCURS IMMEDIATELY FLUSH WITH COOL WATER FOR 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.

##### SKIN CONTACT

REMOVE CONTAMINATED CLOTHING/SHOES AND WIPE EXCESS FROM SKIN. FLUSH SKIN WITH WATER. FOLLOW BY WASHING WITH SOAP AND WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION. DO NOT REUSE CLOTHING UNTIL CLEANED. CONTAMINATED LEATHER ARTICLES, INCLUDING SHOES, CANNOT BE DECONTAMINATED AND SHOULD BE DESTROYED TO PREVENT REUSE. \*\*CONTINUED UNDER NOTE TO PHYSICIAN.\*\*

##### INHALATION

REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION.

##### INGESTION

DO NOT INDUCE VOMITING. IN GENERAL, NO TREATMENT IS NECESSARY UNLESS LARGE QUANTITIES OF PRODUCT ARE INGESTED. HOWEVER, GET MEDICAL ADVICE.\*

##### NOTE TO PHYSICIAN

\*IN GENERAL, EMESIS INDUCTION IS UNNECESSARY IN HIGH VISCOSITY, LOW VOLATILITY PRODUCTS, E.G. NEAT EPOXY RESINS. SKIN CONTACT, CONT'D: IF CONTACT WITH HOT PRODUCT OCCURS IMMEDIATELY FLUSH WITH COOL WATER FOR 15 MINUTES. CAREFULLY REMOVE CLOTHING; IF CLOTHING IS STUCK TO A BURN AREA DO NOT PULL IT OFF, BUT CUT AROUND IT. COVER BURN AREA WITH A CLEAN MATERIAL. GET MEDICAL ATTENTION IMMEDIATELY.

#### SECTION VI SUPPLEMENTAL HEALTH INFORMATION

ALTHOUGH THE SIGNIFICANCE IS UNKNOWN, PRODUCT HAS BEEN SHOWN TO BE MUTAGENIC IN SOME MICROBIAL TESTS, BUT HAS FAILED TO SHOW MUTAGENICITY IN OTHERS. CHROMOSOMAL ABERRATIONS WERE OBSERVED IN CULTURED RAT LIVER CELLS.

#### SECTION VII PHYSICAL DATA

BOILING POINT: >500\*  
(DEG F)

SPECIFIC GRAVITY: 1.17  
(H2O=1)

VAPOR PRESSURE: 0.03 AT  
(MM HG) 77 DEG C

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MELTING POINT: NOT AVAILABLE  
(DEG F)

SOLUBILITY: NEGLIBLE  
(IN WATER)

VAPOR DENSITY: NOT APPLICABLE  
(AIR=1)

EVAPORATION RATE (N-BUTYL ACETATE = 1): NOT APPLICABLE

\*SEE FLASH POINT

APPEARANCE AND ODOR: VERY LIGHT YELLOW, VERY VISCOUS LIQUID.

## SECTION VIII FIRE AND EXPLOSION HAZARDS

### FLASH POINT AND METHOD:

480 DEG F (PMCC)

### FLAMMABLE LIMITS % VOLUME IN AIR

LOWER: N/AV UPPER: N/AV

### EXTINGUISHING MEDIA

USE WATER FOG, FOAM, DRY CHEMICAL OR CO2.

### SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

### UNUSUAL FIRE AND EXPLOSION HAZARDS

NO UNUSUAL HAZARDS.

## SECTION IX REACTIVITY

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

### CONDITIONS AND MATERIALS TO AVOID:

CAN REACT VIGOROUSLY WITH STRONG OXIDIZING AGENTS, STRONG LEWIS OR MINERAL ACIDS, AND STRONG MINERAL AND ORGANIC BASES/ESPECIALLY PRIMARY AND SECONDARY ALIPHATIC AMINES.

### HAZARDOUS DECOMPOSITION PRODUCTS

CARBON MONOXIDE, ALDEHYDES, ACIDS, AND OTHER ORGANIC SUBSTANCES MAY BE FORMED DURING COMBUSTION OR AT ELEVATED (>500 DEG F) TEMPERATURE DEGRADATION. REACTION WITH SOME CURING AGENTS MAY PRODUCE CONSIDERABLE HEAT. RUN-A-WAY CURE REACTIONS MAY CHAR AND DECOMPOSE THE RESIN SYSTEM, GENERATING UNIDENTIFIED FUMES AND VAPORS WHICH MAY BE TOXIC.

## SECTION X EMPLOYEE PROTECTION

### RESPIRATORY PROTECTION

NOT ORDINARILY REQUIRED.

### PROTECTIVE CLOTHING

AVOID CONTACT WITH EYES. WEAR SAFETY GLASSES OR GOGGLES AS APPROPRIATE. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WEAR CHEMICAL-RESISTANT GLOVES AND OTHER CLOTHING AS REQUIRED TO MINIMIZE CONTACT.

## SECTION XI ENVIRONMENTAL PROTECTION

### SPILL OR LEAK PROCEDURES

MAY BURN ALTHOUGH NOT READILY IGNITABLE. USE CAUTIOUS JUDGMENT WHEN CLEANING UP LARGE SPILLS. \*\*\* LARGE SPILLS \*\*\* WEAR RESPIRATOR AND PROTECTIVE CLOTHING AS APPROPRIATE. SHUT OFF SOURCE OF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; DISPOSE OF PROPERLY. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE. \*\*\* SMALL SPILLS \*\*\* TAKE UP WITH AN ABSORBENT MATERIAL AND DISPOSE OF PROPERLY.

### WASTE DISPOSAL

IF THIS PRODUCT BECOMES A WASTE, IT WOULD NOT BE A HAZARDOUS WASTE BY RCRA CRITERIA (40 CFR 261). PLACE IN AN APPROPRIATE DISPOSAL FACILITY IN COMPLIANCE WITH LOCAL REGULATIONS.

## SECTION XII

## SPECIAL PRECAUTIONS

STORE IN A COOL, DRY PLACE. KEEP AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES. CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, CAN CONTAIN HAZARDOUS PRODUCT RESIDUES. HANDLE IN ACCORDANCE WITH THE HAZARD POTENTIAL OF CURING AGENT(S) USED. CAUTION: MAY CAUSE IRRITATION. AVOID CONTACT WITH EYES. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WASH THOROUGHLY AFTER HANDLING. LAUNDRER CONTAMINATED CLOTHING BEFORE REUSE. CONTAMINATED LEATHER ARTICLES, INCLUDING SHOES, CANNOT BE DECONTAMINATED AND SHOULD BE DESTROYED.

HEATING THIS RESIN ABOVE 300 DEG F IN THE PRESENCE OF AIR MAY CAUSE SLOW OXIDATIVE DECOMPOSITION ABOVE 500 DEG F. POLYMERIZATION MAY OCCUR. SOME CURING AGENTS, E.G., ALIPHATIC POLYAMINES CAN PRODUCE EXOTHERMIC REACTIONS WHICH IN LARGE MASSES CAN CAUSE RUNAWAY POLYMERIZATION AND CHARRING OF THE REACTANTS. FUMES AND VAPORS FROM THESE THERMAL AND CHEMICAL DECOMPOSITIONS VARY WIDELY IN COMPOSITION AND TOXICITY. DO NOT BREATHE FUMES. USE A NIOSH-APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVER EXPOSURE. IN ACCORD WITH 29 CFR 1910.134, USE EITHER AN ATMOSPHERE-SUPPLY RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

IF THIS RESIN IS HANDLED, SHIPPED, OR STORED IN BULK, THE RECOMMENDED PUMPING TEMPERATURE IS 180 DEG. F, MAX. TO PREVENT THERMAL BURNS, AVOID SKIN AND EYE CONTACT WITH HOT LIQUID.

## SECTION XIII

## TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION: NOT HAZARDOUS BY D.O.T. REGULATIONS  
D.O.T. PROPER SHIPPING NAME: NOT REGULATED

OTHER REQUIREMENTS:  
N/A

## SECTION XIV

## OTHER REGULATORY CONTROLS

THIS PRODUCT IS LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED: APRIL 22, 1987

JOHN P. SEPESE

BE SAFE

READ OUR PRODUCT  
SAFETY INFORMATION ...AND PASS IT ON  
(PRODUCT LIABILITY LAW  
REQUIRES IT)

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